SAFETY DIGEST

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U.S. ARMY MATERIEL COMMAND
AWARD OF HONOR FOR SAFETY
AMC
SAFETY PROGRAM
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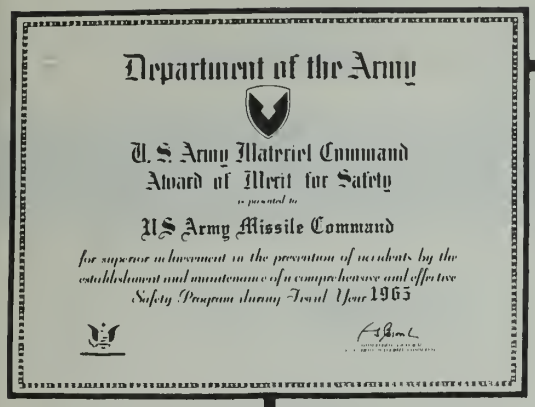
IS PRESENTED TO
U.S. ARMY WEAPONS COMMAND
FOR THE BEST SAFETY PROGRAM OF
U.S. ARMY MATERIEL COMMAND MAJOR SUBORDINATE COMMANDS
DURING FISCAL YEAR 1965

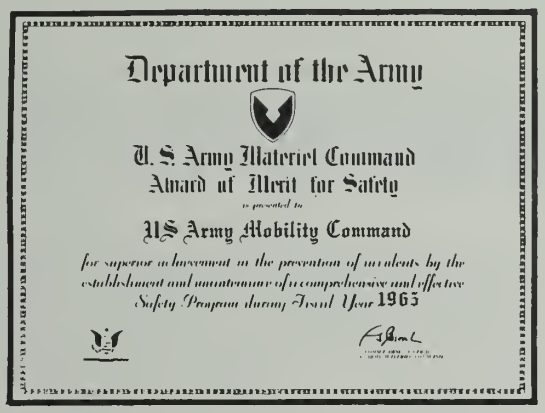


Department of the Army

U. S. Army Materiel Command
Award of Merit for Safety
is presented to

US Army Missile Command

for superior achievement in the prevention of accidents by the establishment and maintenance of a comprehensive and effective Safety Program during Fiscal Year 1965

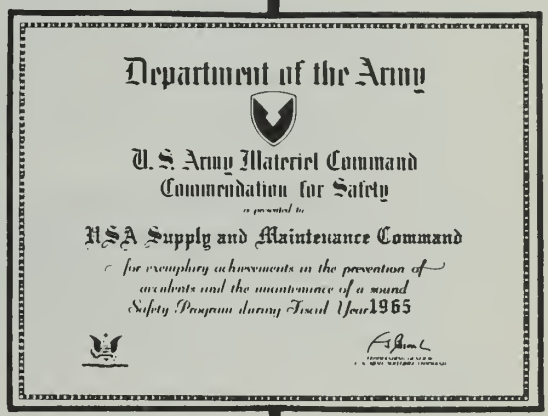


Department of the Army

U. S. Army Materiel Command
Award of Merit for Safety
is presented to

US Army Mobility Command

for superior achievement in the prevention of accidents by the establishment and maintenance of a comprehensive and effective Safety Program during Fiscal Year 1965



Department of the Army

U. S. Army Materiel Command
Commendation for Safety
is presented to

USA Supply and Maintenance Command

for exemplary achievements in the prevention of accidents and the maintenance of a sound Safety Program during Fiscal Year 1965

Department of the Army

U. S. Army Materiel Command
Commendation for Safety
is presented to

US Army Munitions Command

for exemplary achievements in the prevention of accidents and the maintenance of a sound Safety Program during Fiscal Year 1965

HEADQUARTERS
UNITED STATES ARMY MATERIEL COMMAND
WASHINGTON, D.C. 20315

AMC PAMPHLET 385-68 **NOVEMBER 1965**

The Safety Digest is an AMC Pamphlet prepared by the Safety Division, Headquarters, U. S. Army Materiel Command. Its purpose is to disseminate information which can materially influence and improve safety programs at all Command establishments.

Articles are included to supplement technical knowledge as well as practical knowledge gained through experience. They provide a basis for the further refinement of safety measures already incorporated in operating procedures and process layout. To achieve maximum effectiveness, the Safety Digest should be given widespread circulation at each AMC establishment.

Articles appearing in the Safety Digest are unclassified and are not copyrighted. They may be reproduced as desired in order to bring pertinent accident prevention information to the attention of all employees. The Army Materiel Command Safety Digest should be given a credit line when articles are extracted.

Unclassified material believed to be of interest or benefit to other establishments is welcome for publication in the Safety Digest. Please send articles for review to: U. S. Army Materiel Command Field Safety Agency, Charlestown, Indiana. If possible, include pictures, charts, drawings, and illustrations that clarify and heighten interest in your presentation.

SELWYN D. SMITH, JR.
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Chief of Staff

OFFICIAL:

STANLEY J. SAWICKI
Colonel, GS
Chief, Administrative Office

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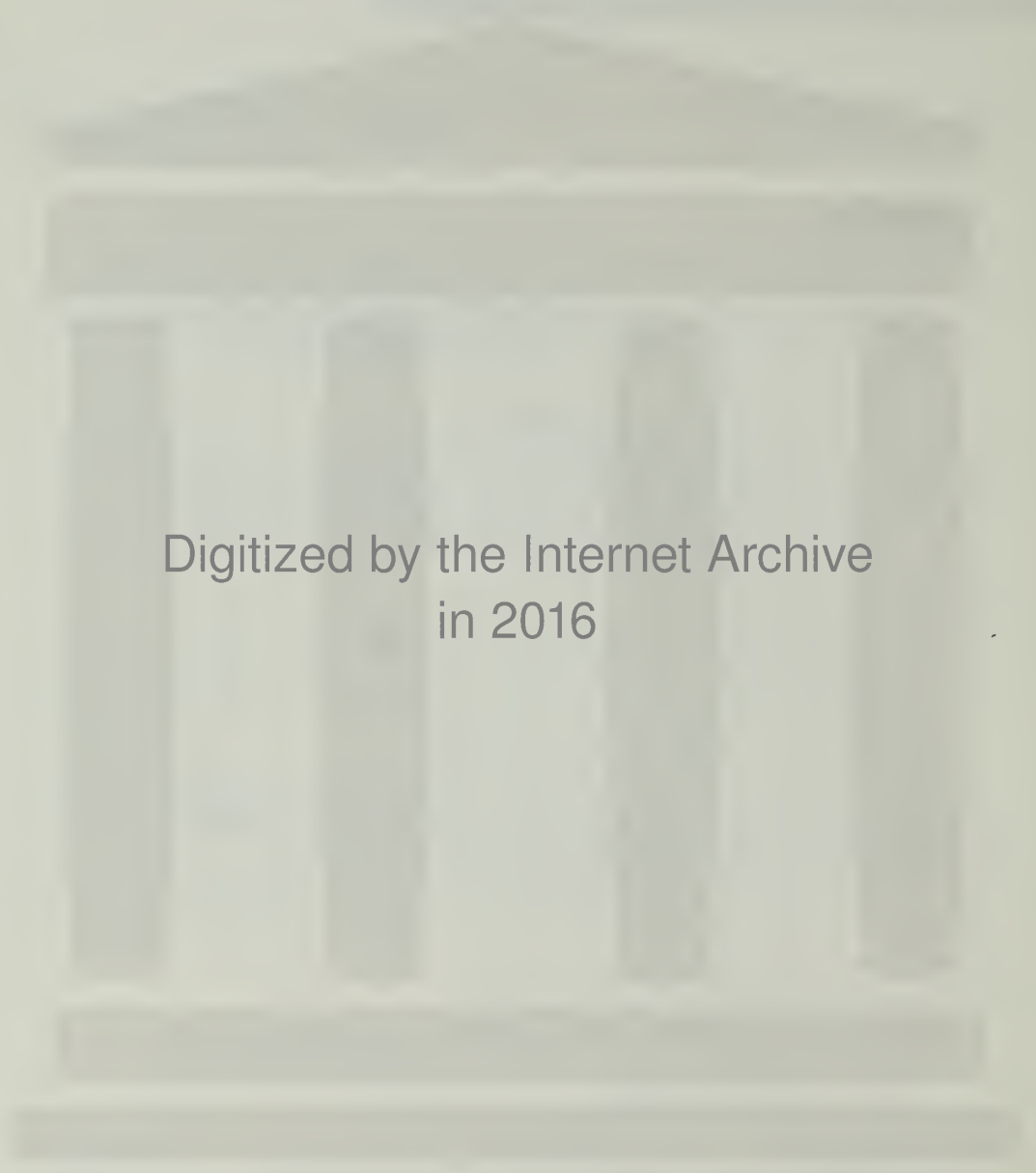

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U. S. ARMY MATERIEL COMMAND SAFETY AWARDS FOR FY 1965

The following U.S. Army Materiel Command Subordinate Commands, installations, and activities have won AMC safety awards. Personnel of these elements are congratulated for their contributions to the U.S. Army Materiel Command Safety Program.

● Group 1

MAJOR SUBORDINATE COMMANDS

Award of Honor

	Point Score
U.S. Army Weapons Command	94.35

Awards of Merit

U.S. Army Missile Command	92.40
U.S. Army Mobility Command	91.35

Commendations for Safety

U.S. Army Supply and Maintenance Command
U.S. Army Munitions Command

● Group 2

INSTALLATIONS AND ACTIVITIES REPORTING DIRECTLY TO HEADQUARTERS, U.S. ARMY MATERIEL COMMAND

Award of Honor

U.S. Army Ballistic Research Laboratories	96.50

Awards of Merit

U.S. Army Materiel Command Installations and Services Agency	95.00
Deseret Test Center	95.00
Joint Military Packaging Training Center	95.00
U.S. Army Management Engineer Training Agency	94.50
U.S. Army Coating and Chemical Laboratory	94.50
U.S. Army Production Equipment Agency	94.00
Cincinnati Procurement District, U.S. Army	91.30
U.S. Army Human Engineering Laboratories	85.25

Commendations for Safety

	Point Score
U.S. Army Materiel Command Board	
St. Louis Procurement District, U.S. Army	
Cleveland Procurement District, U.S. Army	
Office of Project Manager, NIKE-X	
U.S. Army Materiel Command Field Safety Agency	

● Group 3

INSTALLATIONS AND ACTIVITIES REPORTING DIRECTLY TO U.S. ARMY SUPPLY AND MAINTENANCE COMMAND

Award of Honor

Umatilla Army Depot	98.00

Awards of Merit

Savanna Army Depot	94.35
New Cumberland Army Depot	92.80
Erie Army Depot	91.75
Tobyhanna Army Depot	91.30
Red River Army Depot	91.05
Anniston Army Depot	90.90
Sierra Army Depot	90.85

Commendations for Safety

Atlanta Army Depot
Fort Worth Army Depot
Fort Wingate Army Depot
Seneca Army Depot
Schenectady Army Depot
U.S. Army Petroleum Center
U.S. Army Equipment Authorization Review Center

● Group 4

INSTALLATIONS AND ACTIVITIES REPORTING DIRECTLY TO U.S. ARMY MUNITIONS COMMAND

Award of Honor

Lake City Army Ammunition Plant	92.58

Awards of Merit

	Point Score
Louisiana Army Ammunition Plant	90.71
Indiana Army Ammunition Plant	90.43
Milan Army Ammunition Plant	89.49
Newport Army Ammunition Plant	88.95
Radford Army Ammunition Plant	85.31
Edgewood Arsenal	82.68

Commendations for Safety

Lone Star Army Ammunition Plant
Longhorn Army Ammunition Plant
Scranton Army Ammunition Plant
Pine Bluff Arsenal
Rocky Mountain Arsenal
Picatinny Arsenal
Frankford Arsenal
Kansas Army Ammunition Plant
Twin Cities Army Ammunition Plant
St. Louis Ordnance Plant
Ravenna Army Ammunition Plant

● Group 5

INSTALLATIONS AND ACTIVITIES REPORTING DIRECTLY TO U.S. ARMY WEAPONS COMMAND, U.S. ARMY MISSILE COMMAND AND U.S. ARMY TEST AND AND EVALUATION COMMAND

Award of Honor

Charlotte Army Missile Plant	96.7

Awards of Merit

Erie Proving Ground	96.20
Springfield Armory	94.20
U.S. Army Airborne Electronics and Special Warfare Board	89.35
Missile Support Command	87.90
Watervliet Arsenal	87.70

Commendations for Safety

U.S. Army Infantry Board
U.S. Army Tropic Test Center

● Group 6

INSTALLATIONS AND ACTIVITIES REPORTING DIRECTLY TO U.S. ARMY MOBILITY COMMAND AND U.S. ARMY ELECTRONICS COMMAND

Award of Honor

	Point Score
U.S. Army Aviation Materiel Laboratories	91.30

Awards of Merit

U.S. Army Lima Modification Center	91.00
U.S. Army Engineer Research and Development Laboratories	90.70
Michigan Army Missile Plant	89.90
Directorate of Materiel Readiness	89.60

NATIONAL SAFETY COUNCIL AWARD NOTIFICATIONS

● Natick Laboratories has been awarded a National Safety Council (NSC) Award of Honor for operating 3,297,041 man-hours without a disabling injury from 13 October 1964 to 30 May 1965.

● Atlanta Army Depot has qualified for a NSC Award of Merit for achieving a record of 1,018,756 man-hours without a disabling injury from 25 May 1965 to 21 July 1965.

● Rocky Mountain Arsenal's safety record of operating 2,511,367 man-hours without a disabling injury from 18 July 1964 to 29 June 1965 resulted in a receipt of a NSC Award of Merit.

● Rock Island Arsenal was notified that a NSC Award of Merit will be forwarded since it had operated 1,900,789 man-hours without a disabling injury from 11 May 1965 to 23 July 1965.

● Umatilla Army Depot has received a NSC Award of Merit for operating 1,775,018 man-hours without a disabling injury from 11 November 1963 to 30 June 1965.

SAFE HOLIDAY DRIVING

Major General James W. Sutherland, Jr.
Commanding General, U.S. Army Test & Evaluation Command

(The following safety message was issued by General Sutherland shortly before the Independence Day weekend. His comments are equally applicable to the Thanksgiving Day, Christmas, and New Year's Day weekends.)

"It used to be said that death and taxes were the only sure things in life. To a degree this may still be true; however, taxes are decreasing and death is on the upswing, especially during weekend holiday periods, particularly on our highways. Why is it that an otherwise relatively sane and knowledgeable individual will become completely thoughtless and irresponsible when he gets behind the wheel of an automobile?

"He will never be able to beat, or even equal, the speed records which have been set...so why does he try? He will not arrive at his destination much sooner than the others whose cars he has passed by cutting in and out...so why does he try? He will never be able to prove to anyone's satisfaction that he drives better with just a little bit of alcohol in his system...so why does he try? The only thing that he will be able to do will be to become an accident statistic for the National Safety Council.

"Let me ask all of you, military and civilian alike, to use a little common sense over the coming holiday weekend. When the next workday morning rolls around, make sure that your name doesn't appear on the tag tied to the toe of a body on a slab in the morgue. Remember, death is very certain and very permanent. Why give it an extra advantage? Life is short enough as it is. Why make it any shorter in an attempt to prove nothing?"

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SAFE USE OF PLASMA-JET TORCHES

Lyman E. Pevey, Safety Director
Springfield Armory

For well over a century Springfield Armory has been known primarily as the nation's center for the development and production of small arms weapons for ground use. More recently emphasis at the Armory has been shifting heavily in the direction of research, development, engineering, procurement and pilot production of new armament systems for helicopters and fixed wing aircraft. Dynamic new talents in the scientific, engineering, and support fields involved have been added to the Armory to upgrade capabilities in this increasingly important aircraft armament mission area. Coupled with this has been the installation of new equipment that presents varied safety problems. Recently the research work at the Armory has resulted in the installation of plasma arc apparatus, which presents many considerations for safe operation.

Plasma torches and gas-shielded torches are sources of intense localized heat which comes from the electrical energy applied instead of a chemical reaction. Much higher temperatures can be obtained from these torches than from oxy-acetylene or oxy-hydrogen torches that rely on the heat of reaction of gases involved. The principles of operation of both plasma and inert gas torches are similar.

The two basic types of gas-shielded welding torches are consumable-electrode and nonconsumable-electrode. These are similar to ordinary electric welding in that an electric arc is struck between the electrode (cathode) in the torch and the metal workpiece (anode). The difference in operation of gas-shielded torches is that a flow of inert gases (usually argon or helium) provides a shield to protect molten metal from contact with air, thus making practical the use of higher temperatures by using higher current densities.

In plasma torches, a flow of gas is also maintained as in gas-shielded welding, but the gas is more highly ionized by the high current density electric arc or by a high frequency field. Additionally, the electrode is recessed, the throat is restricted and very high current densities are used.

The three main types of plasma-jet torches are: (1) the transferred-arc, where the torch itself is used as the cathode and the workpiece or metal being cut is the anode; (2) the nontransferred-arc which does not require the workpiece to complete the circuit, but in which the arc strikes from the cathode within the torch to the torch tip (anode) and the gas is ionized when it passes through the arc; and (3) the induction-coupled plasma torch in which the gas is ionized by a high frequency radio wave field and also does not require the workpiece to complete the circuit.

The transferred-arc plasma jet is used mainly for cutting metal and for weld surfacing to apply a metal overlay. The nontransferred-arc and the induction-coupled plasma torches are used in various processes such as welding, metallizing, and applying ceramic coatings.

Prior to use of its plasma arc apparatus Springfield Armory's safety, medical, and research personnel performed a coordinated survey of equipment to consider hazards involved and to provide procedures and controls for the safety and health of personnel involved with operation of apparatus. The following factors were considered:

1. Location. Due to nature of operations conducted at Springfield Armory, all plasma-jet torch operations are accomplished within a spray booth enclosure provided with adequate exhaust ventilation and water curtain. When operations are not conducted within such a booth, care should be taken to assure there is adequate ventilation or that proper respiratory protective equipment is used, if applicable.

2. Operating Personnel. Only authorized qualified operators are allowed to use the equipment. In view of hazards involved, a minimum of two personnel will be available to operate equipment. Personnel using the plasma-jet torch equipment are required to report to the Medical Branch prior to initial operation and annually thereafter for eye examination, audiogram, and chest X-ray.

3. Protection from Ultraviolet and Infrared Radiation.

a. During plasma-jet torch operation the operator is required to wear a dark blue shop coat, lined asbestos gloves with leather palms, chrome-leather knee-length apron, safety glasses with sideshields having a minimum of shade #2 lenses, and headshield (welding helmet). Required shades of headshield filter plate are as follows:

Current Range	Shade
Up to 100 amps	5
100 to 400 amps	10
Above 400 amps	12

If the operator must turn away from the plasma-jet in order to manipulate the panel controls, the back of his neck should also be protected. The operator is required to wear the specified safety glasses at all times while in the vicinity of the plasma-jet torch. He will lower the head shield during actual use of plasma-jet when viewing of the arc is necessary. The reason for this is to protect him against stray flashes and reflected ultraviolet light upon raising of the head shield. Viewing of the arc should NEVER be attempted without protection afforded by the appropriate filter plates in the head shield.

b. Under normal conditions it is assumed that personnel other than the plasma-jet torch operator will not be required to enter the spray booth enclosure during operation of the plasma torch, but will be in the vicinity of the panel controls or just outside the spray booth enclosure. Under such conditions personnel will be required to wear dark clothing (preferably dark blue shop coat with long sleeves) and, as a minimum, safety glasses specified above if no attempt is made to view the arc. No attempt will be made to view the arc without protection afforded by additional filter plates of appropriate shade, which will be available in hand shields provided for that purpose. If personnel find it necessary to enter the booth enclosure during operation of plasma-jet torch, they must wear protective equipment similar to that worn by the torch operator so as to protect skin and eyes from ultraviolet rays.

c. The plasma-jet torch operations should be effectively screened for the protection of passers-by or other individuals in the area. There should be clearance between the bottom of the curtain and the floor to allow for proper ventilation. The Armory's installation includes a welding curtain of non-reflective fire-resistant material (capable of intercepting ultraviolet rays) placed on a frame surrounding the face of the spray booth.

d. Adequate warning signs are located in the operating area indicating "DANGER - DO NOT WATCH ARC."

4. Protection from Noise. During some spraying conditions the sound level is above the damage risk criteria in the operator work area and in the annoyance range in the sur-

rounding area. Tests at Springfield Armory showed sound levels of 102 db within the spray booth enclosure at the operator's position. Sound level decreased rapidly outside of the booth enclosure and was below damage risk criteria several feet away from face of booth. Therefore, operator and personnel in close proximity to face of the booth (inside welding curtain enclosure) must wear ear protection. At the Armory, the operator's head shield has built-in ear muffs. Other personnel wear ear defenders.

5. Chlorinated Solvents. Ultraviolet radiation from arc decomposes vapors of chlorinated hydrocarbons (trichloroethylene, perchloroethylene, methyl chloroform, etc.) to form highly toxic and irritating gases, including phosgene. These solvents will not be used within 75 feet of the booth during or within one hour preceding the use of plasma-jet torch. Containers of these solvents within specified distance will be tightly closed during the operation. Caution must also be exercised when spraying materials which have been vapor degreased or otherwise cleaned with chlorinated solvents.

6. Toxic and Noxious Gases. Toxic and noxious gases (ozone and oxides of nitrogen) may be liberated by either the operation itself or when certain materials are used as spray coatings or as substrates. In addition plasma spraying is a dust producer, and it is important that all precautions be taken for operator protection. Wherever practicable, dust collection equipment should be installed. It is most important that respiratory protection be provided when required. Particular care must be taken when handling powdered materials such as aluminum, antimony, barium, boron, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, thorium, tungsten, zinc, and zirconium. As previously noted, all plasma-jet operations at Springfield Armory are accomplished within spray booth enclosures provided with water curtain and adequate exhaust ventilation.

7. Electric Shock. This hazard is always present while operating plasma-generating equipment due to high voltages and current used. It should be mandatory that personnel involved with plasma-jet torch operations be familiar with artificial resuscitation methods. Particular caution should be exercised as indicated below:

a. Cables should be checked frequently and thoroughly to assure that insulation is not worn, broken, or frayed.

b. At all times when plasma generating equipment is left unattended and/or when changing cable arrangement on power rectifiers or otherwise connecting or disconnecting

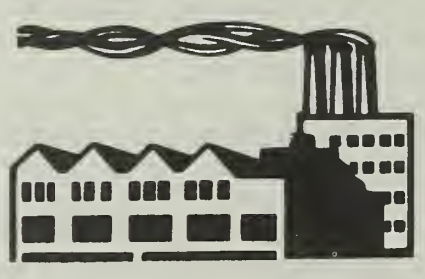
electrical cables, the main power rectifier switches shall be in the "OFF" position and the main disconnect switch shall be locked in the "OFF" position by means of a padlock, the keys for which are to be in possession of operating personnel only. Further, a tag should be attached to the locked out switch indicating whom to contact for keys if such necessity should arise.

c. Terminal covers of power rectifiers must be kept in the "DOWN" position (covering terminals) at all times when power control switches are in the "ON" position. Also, signs warning of the high amperage should be placed on the rectifier terminal covers. A safety feature that was incorporated into the electrical system of the Armory's plasma equipment was the installation of microswitches in such a manner that rectifier units will not become energized until terminal covers are in the "DOWN" position. When terminal covers are in the "UP" position, the supply to the rectifiers would be automatically interrupted. Incorporation of this safety feature must not negate the requirement for always locking out the main disconnect switch in the "OFF" position prior to checking or switching cables.

d. Grounding must be adequate.

e. Water used to cool the torch tip may complicate electrical hazards. At the first sign of water leakage, shut off main power controls.

8. Handling Compressed Gas Cylinders. The use of inert gases as a working media in the plasma-jet torch operation presents the same handling problems as do all high-pressure gas systems. Care must be exercised to avoid rupturing the cylinders. Pressure reducing valves and flow meters should be used as precautionary measures as well as for accurate control of gas consumption.



REDUCING DYNAMITRON RADIATION EXPOSURE

Arnold E. Larson, Safety Engineer
Picatinny Arsenal

The word Dynamitron is a trade name given by a manufacturer to indicate the potentialities of a very powerful mechanism. This machine uses high potential differences to accelerate electrons or positive ions in a straight line. Consequently, the common terminology for this machine is "linear accelerator."

Its particular application to scientific endeavor at Picatinny Arsenal is being channeled into research involving the sensitivities of explosives and propellants under high energy radiations (up to the 3 MEV energy levels). Along with the enormous potentials this gives our scientists, we also encounter numerous hazards that must be carefully circumvented or eliminated entirely when possible. Special precautions must be taken in the areas of radiation exposure, noxious gases, high pressure gasses, high voltage shock, and cryogenic problems with nitrogen or other similar coolants. However, in this article only the radiation problems will be amplified.

In order to reduce to a minimum the radiation exposure of the personnel working with or around the Dynamitron, high density concrete brick walls have been erected in maze-like design to house the machine. In places these walls are eight feet thick. The ceiling is constructed of one-foot thick reinforced concrete. All dimensions were calculated to provide maximum protection to the employee and to more than meet the requirements that maximum permissible doses are not exceeded.

To prevent unauthorized entry into the Dynamitron chamber where high intensity radiation is produced when the machine is in operation, the enclosure gates have been interlocked with the control system. The same key that turns on the circuits locks the enclosure gates and the system will not become activated until the gates are locked. A warning horn is also sounded before the scientists switch on the power.

An added safeguard as well as a functional item for other phases of work is the intercom system connecting the

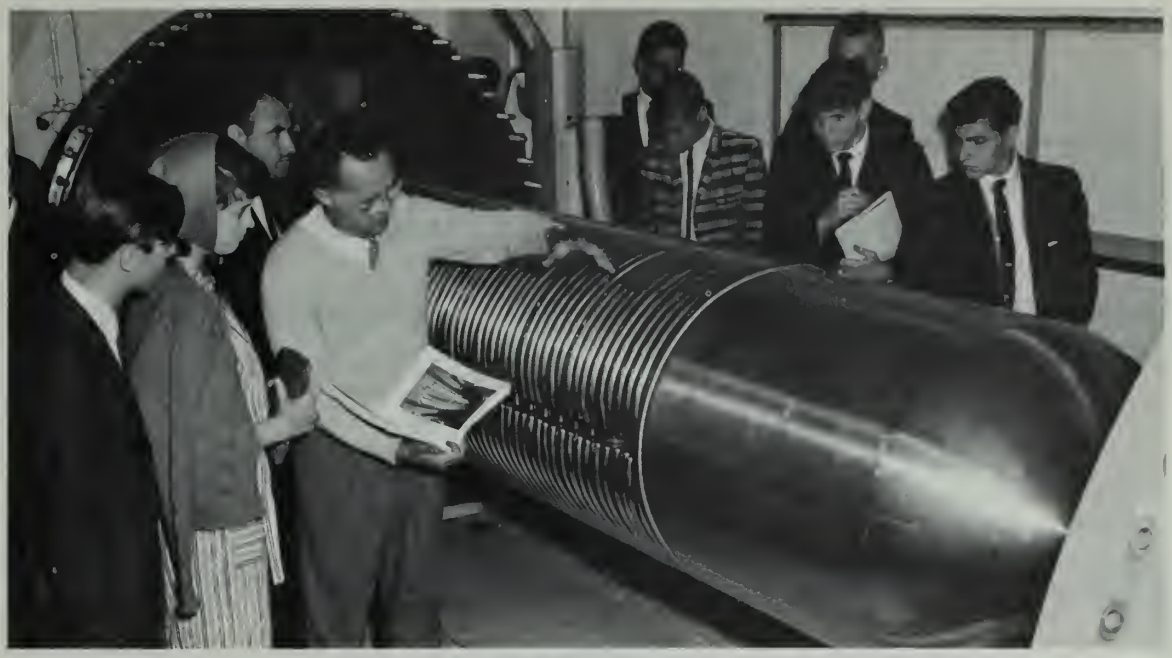
control room to the Dynamitron chamber. Direct contact can be had at all times between interested personnel. The operator of the machine has complete authority over all other personnel in the control room while the machine is on.

All scientists assigned to the machine and in the entire building as well, since it is totally a radiation facility, wear film badges at all times. All areas outside the operating location are checked during Dynamitron operation with a calibrated survey meter to determine dose rates. Measurements are taken periodically by the Safety Division to check on radiation levels.

No one is allowed in the accelerator room with the high voltage on, even though the beam source is not installed. The danger of radiation injury due to cold discharge resulting from high voltage being applied to a beam tube, even without a beam source installed, cannot be overemphasized. Due to the breaking loose of free electrons from various surfaces because of high voltage gradients that are applied to the tube, there is an acceleration of particles down the tube even if no beam source, per se, is installed. This particle acceleration can and does create a radiation hazard as great as any other beam current of comparable magnitude.

When the machine is connected for electron operation the radiation danger is due to X-rays produced at the target. As little as one microampere of high energy electrons will produce severe skin burns. When it is connected for positive ion operation, the main danger is from X-rays at the source due to back streaming of electrons. If the machine is operating at sufficiently high levels of energy, there is danger of neutron production in the target area.

With this information as an appetizer, one can just begin to fathom the hazards involved in this type of operation. Problems of ventilation, pressurized systems, high voltage, and production of ozone, as well as other toxic gases are inherent in this system. They are also compounded by the addition of our explosives and propellants investigations that are to be carried out.



The operation of the Picatinny Arsenal Dynamitron (linear accelerator) is explained to a group of young visitors.

* * *

SEALING COMPOUND MIL-S-8516C CONSIDERED HAZARDOUS

Material procured under Amendment 1, Class 2, one-quart kit of MIL-S-8516C, Sealing Compound, Synthetic Rubber, Electrical Connectors and Electrical Systems, Accelerator Required has been found by the Navy to be defective. The defective material is further identified as FSN 8030-174-2597, Compound No. 1201, GSA Contracts ATG OA 50098 and SE-B-11961-00 of 8/64 produced by Dunbar Sales, Jersey City, New Jersey. There may also be defective material with other FSN's, contracts, classes, grades, or quantities manufactured by Dunbar Sales. The material is hazardous for use due to poor physical and electrical properties with dielectric or other electrical failures possible.

Accordingly, use of all sealing compound for critical applications procured under MIL-S-8516C from Dunbar Sales should be immediately discontinued and held for identification. Identification can be determined by the qualifying laboratory i.e. Naval Air Material Center, Philadelphia 12, Pennsylvania, ATTN: Superintendent Aeronautical Materials Laboratory. Do not confuse this material with acceptable material of Products Research Company.

TOXICITY OF TETRA (KIS) DIMETHYLAMINO ETHYLENE

Picatinny Arsenal has been doing preliminary work with tetra (kis) dimethylamino ethylene for some special items in the pyrotechnic field. Further specialized knowledge of the compound was required. As a result, the Surgeon General was requested to investigate the toxicity and hazards related to this compound

The following comments were submitted:

a. Tetra (kis) dimethylamino ethylene is unstable in the presence of air and forms the following primary oxidation products: formaldehyde, dimethylamine, tetramethylurea, tetramethyloxamide and traces of oxalic acid.

b. On the basis of the results of animal studies which have been done, the principal toxic hazards associated with the handling or use of the material are those resulting from skin and eye contact, and inhalation of mists, aerosols, or vapors. It is particularly toxic if inhaled. It is also toxic if ingested.

c. Precautions to be taken when working with this compound are: use under hooded exhaust; have air-line respirator available; if spillage occurs, neutralize with ethyl alcohol; do not get into the eyes, on the skin, on clothing; in case of contact, immediately flush skin or eyes with copious amounts of water for at least 15 minutes; for eyes get medical attention.

d. A significant health hazard exists if used as a spray in confined spaces where adequate ventilation cannot be maintained. If used in the open, the principal danger would be from direct contact and this should be avoided.

e. Medical authorities should be informed of the locations where this material is utilized and the identity of employees involved.

GASOLINE AS A CLEANING AGENT

Reports continue to be received on fatal and nonfatal disabling injuries resulting from the unsafe and unauthorized use of gasoline and other flammable, low-flash-point liquids as cleaning agents. As a recent example, sparks from an electric buffer ignited vapors from gasoline used as a solvent to clean a latrine floor. The resultant flash explosion killed one enlisted man and burned two others.

In order to reduce or eliminate such accidents, the following procedures are suggested:

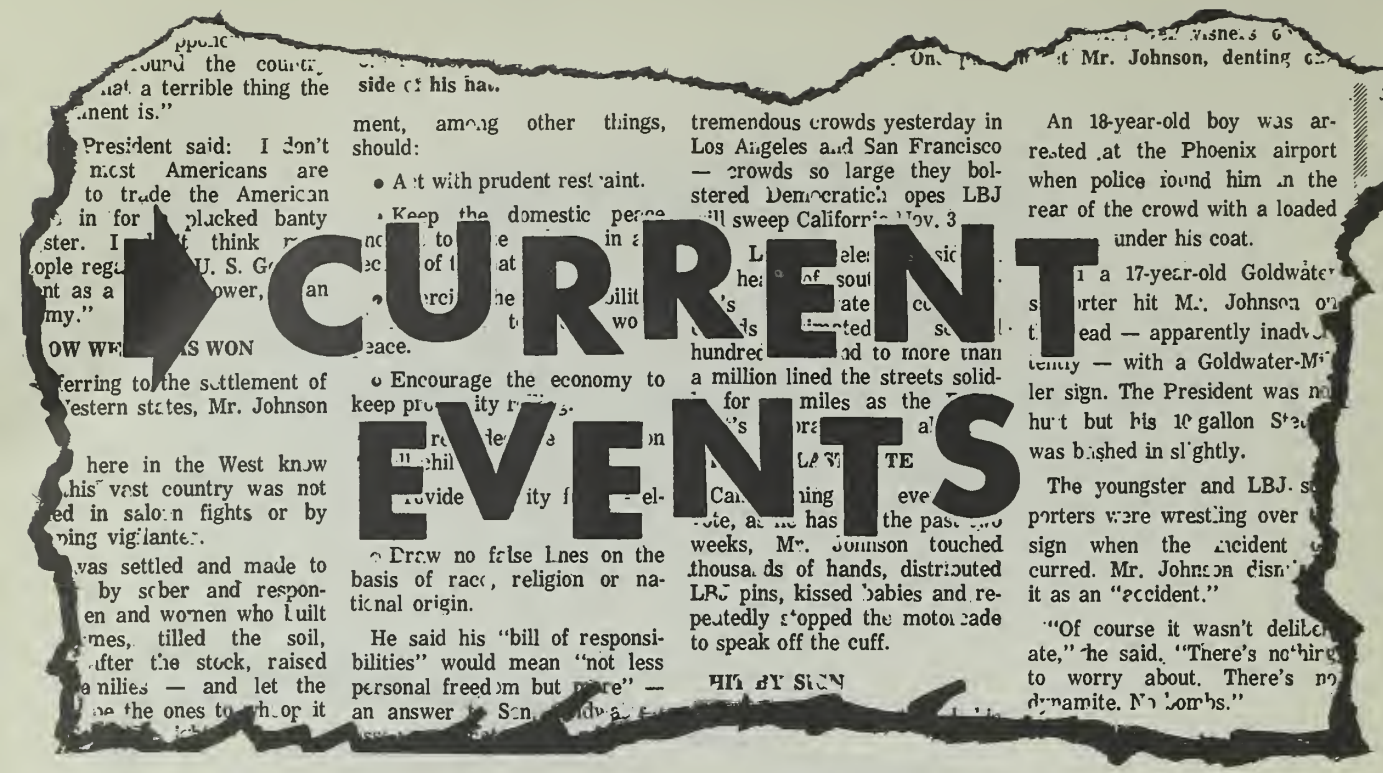
a. Assure a supply of nonflammable, low-toxic cleaning solvents.

b. Publicize the availability of these solvents.

c. Instruct personnel in the proper use of approved solvents.

d. Enforce regulations* which govern the use of cleaning solvents.

*Technical Manual 743-200, 16 Jan 1961, "Storage and Materials Handling," (para 6.0.22.4.9.).
AMC Regulation 385-224
June 1964, "AMC Safety Manual," (para 1322).
Engineer Manual 385-1-1, 13 Mar 1958, "Safety - General Safety Requirements," (para 12-54).



SUSPENDED LOAD DROPS WHEN HANDLED

A workman made ready to place a gun housing on the table of a milling machine. He lifted the 140-pound item with a specially designed fixture that was suspended from a sling attached to the hook of a floor-operated bridge crane. The housing was moved into place above a fixture into which it was to fit on the machine table.

Before he lowered the load the worker stopped to wipe its underside with a shop cloth. When he touched the bottom of the suspended load, the housing, the lifting device, and the sling dropped without warning. The man's right hand was caught between the load and the edge of the table. His index and middle fingers were fractured and the tendons were severed.

Investigation revealed that the worker had failed to snap the sling through the safety latch and onto the hook. The eye of the sling had caught on or near the point of the hook. The action of wiping the bottom of the housing dislodged the precariously suspended load.

All employees in the shop were instructed not to clean the underside of work pieces while the work is suspended over a machine. Before making any lift they are to make certain that the load is safely suspended by the hook. The sling that had been used when the accident occurred was replaced by a more flexible sling.

WET PLUG YIELDS HOT SPARK

The young soldier was helping with the installation of an air cooler on the outside of a building at the second floor level. He stood on a scaffold to do his work. He finished making a water line connection, and decided to plug in the cooler. Both the plug and his hands were wet with water that had escaped from the water line while he was making the connection.

When the wet plug was brought into contact with the electrical outlet the current produced a spark. The soldier was startled and he jumped back, forgetting that he was on a scaffold. He fell 15 feet to the ground and landed on his back. He received a back sprain that prevented him from performing his regular duties for three days.

The soldier had been instructed not to handle an electric cord with wet hands. He acknowledged that he had known he should not have attempted to make the electrical connection and that he had been negligent in failing to remember he was working on a scaffold. He was disciplined when he returned to duty.

The soldier's supervisor and the other personnel working on the cooler installation had left the scene for a coffee break just before the accident. The supervisor was told that he should not have left a man working alone on a scaffold. The need for guard rails or safety ropes for scaffolds was pointed out to him.

* * *

EMERGENCY VEHICLE INVOLVED IN CRASH

An Army ambulance was being used to transport a patient through city traffic. The nurse who was riding with the patient asked the driver to use his siren and to proceed as quickly as possible to the hospital.

The driver turned on his siren when he was about 150 feet from a busy intersection. He saw that the light ahead of him was red and that traffic appeared to have stopped from both directions on the busy cross street to give way to his emergency vehicle. He failed to see a late model sedan approaching in the center lane from the right. The windows of the sedan were up to shut out the late morning summer heat, its air conditioner was operating, and the driver had not heard the siren.

The ambulance driver started through the intersection against the red light. He found that the sedan was there ahead of him. It was too late to prevent a collision. The right front door was bent and the door glass of the sedan was broken. The front bumper and the left front headlight cowl and the left front door of the ambulance were damaged. None of the occupants of the two vehicles were injured.

To prevent similar accidents the installation issued fresh instructions to all personnel who were authorized to operate emergency vehicles. They were told to approach intersections with caution, because the operators of other vehicles might fail to give the right of way to the emergency vehicle.

* * *

OBSTACLE DISABLES OFFICE WORKER

The cord that ran from the outlet across the aisle to the electric typewriter had been recognized as a hazard. To reduce the likelihood of it causing a fall by tripping, a metal wastebasket was moved into the aisle to stop traffic.

Fifteen minutes before the end of the day an elderly female employee started from her desk in one part of the office to the files. She remembered the loose cord on the floor and was careful to step over it. She failed to notice the metal wastebasket, and she received a painful bump when her lower left leg struck it.

In a few minutes the pain began to subside. Anxious to go home at the regular time, she did not report to the dispensary. The contusion on her leg later caused her to be absent from work for several weeks.

The corrective action taken to prevent similar accidents included the following:

a. Supervisors were instructed to take effective action to correct unsafe office conditions. In the case of electrical cords these might include installation of receptacles and rearrangement of desks.

b. Pending completion of work to correct unsafe conditions, appropriate and effective temporary controls were to be put into effect by supervisors.

c. Employees were advised to heed hazard control instructions.

d. Employees were instructed to report all accidents promptly.

EMPLOYEE SLIPS OFF
WET FIRE TRUCK TAILGATE PLATFORM

The fire truck had been taken to a wash rack and washed. The employee then checked the tank on the truck and found the water level was down slightly. He decided to add water.

The filler pipe was located on the top of the tank. It was reached by climbing on to the tailgate platform. This was made of corrugated steel and ran the full width of the truck. There were substantial handrails on both sides but none in the center. The tailgate was 38 1/2 inches above the ground level and below it there was a corrugated-steel step with 19 inches clearance. The step was 37 1/2 inches long and was located in the rear center of the truck.

The employee put the water hose in the filler pipe and started to descend. Both the tailgate and the step were wet from the just completed washing. The man's foot slipped from the step and he fell to the concrete floor. He suffered a compression fracture of a lumbar vertebra. It was estimated that the injury would cause four months of lost time from work.

The following corrective actions were taken to prevent similar falls from the truck:

a. A vertical handrail was installed on the center rear of the truck for use by individuals while mounting and descending.

b. The location of the step below was marked with yellow paint on the tailgate platform.

c. All fire department employees were instructed to use caution when moving on wet and slippery surfaces.

ROCK ISLAND ARSENAL USES PORTABLE AERIAL TOWERS

George W. Lintner
Safety Officer, Rock Island Arsenal

For several years truck-mounted portable aerial towers have been used by electrical power companies as a safe and expedient means of reaching high and dangerous locations. During Fiscal Year 1966 Rock Island Arsenal will put a tower to use on a variety of other exterior and interior maintenance jobs. It will be a labor-saving, and possibly, a life-saving addition to the equipment utilized by the Installation Facilities Branch.

Some of the ways in which the tower will be used and present facilities it will replace are:

a. Routine maintenance of overhead heaters, steam traps, sprinkler systems, and water, gas, and air lines which presently require scaffolding or long extension ladders.

b. Inspection of several paint spray booth ventilation ducts presently requiring use of lifelines and belts.

c. Tree service and trimming where men are now required to climb the trees or use extension ladders.

d. Repairs and installation of power and other transmission lines now requiring the climbing of poles or installation of scaffolding.

e. Repair to downspouts, gutters, and roofs on three or four story buildings now requiring use of lifelines and belts, or extensive scaffolding.

f. Repair and painting of exhaust and ventilation stacks presently requiring boatswain's chairs, swinging scaffolds or the aerial ladder truck of the fire department.

g. Removal of ice build-up from plugged gutters and downspouts now requiring lifelines and belts or scaffolding.

h. Replacement of light bulbs in craneways presently requiring use of scaffolding or a forklift truck and safety pallet.

Truck-mounted aerial tower will be tested to withstand 400,000 volts AC (line to ground) for work around electrical lines.

These functions and others are feasible because of the many safety features being built into the aerial tower at the request of the Installation Facilities Control Branch. Some of these requirements are:

a. A leveling device capable of leveling unit on a slope of five degrees.

b. A lifting basket with a capacity of 500 pounds minimum, a minimum tipping basket load of 875 pounds and a structural test load of 1,500 pounds.

c. Operating controls in both basket and truck, with those in the truck overriding those in the basket.

d. Suitable outriggers to maintain stable and safe operation at all elevations and locations.

e. Full 360° rotation so virtually all work sites can be reached.

f. Tested to withstand 400,000 volts AC (line to ground) for work around electrical lines.

By combining the features of the tower and established safe practices, the use of an aerial tower will be beneficial to the maintenance workers. It will make it easier to perform the work and it will eliminate many of the presently encountered hazards.

▲▲▲▲

RAILROAD CROSSING TRIPPING HAZARD REDUCED

Frank Lesniewski, Safety Officer
Rock Island Arsenal

Railroad crossing sidewalks are normally filled to the rail level between the rails, leaving a small space on one side of each rail. This is satisfactory on main line track crossings. When the pedestrian sidewalk crosses at a switch point, however, a much larger space is needed between the main rail and the switch rail to allow movement for switching. This creates a definite tripping hazard at this point.

The Rock Island Arsenal Roads and Grounds Maintenance Branch has overcome this hazard by providing a floating or movable board walkway between the rails. By fastening this floating platform between switch rails, it reduces the opening between the rail and the walk from five to one and one-half inches. The one and one-half inches is the minimum space required for locomotive and car wheel flanges.

This is especially advantageous during the winter months when the rails may be covered with snow and the vision of the pedestrians is obstructed.

Photo 1

Photo 2

Photo 1 shows the five-inch space that separated the sidewalk and the rail at a site where the walkway crossed a railroad switch point. When Rock Island Arsenal installed a movable walkway the open space was narrowed to one and a half inches. A pedestrian tripping hazard was reduced by the walkway change. Photo 2 shows the same crosswalk after the modification.

AN OFFICE SAFETY CHECK LIST

A substantial part of the Army Materiel Command accident exposure and many of its accidents occur in offices. The control and elimination of office hazards offer a fertile field for accident prevention efforts. The following office safety check list, used by the Mason & Hanger-Silas Mason Co., Inc., operating contractor at the Iowa Army Ammunition Plant, lists 52 possible sources for accidents. How many of these exist in your offices?

● Tripping, Slipping and Falling

1. Extension cords on floor or across aisles.
2. Water, oil, soap, etc., spilled on floors or stairs.
3. Poor illumination in stairways and corridors.
4. Use of chairs, boxes, or other objects as substitutes for ladders.
5. Rugs and carpets not secured to prevent slipping.
6. Stairways not equipped with anti-slip treads and handrails.
7. Personnel running on stairs, walkways, or in corridors.
8. No caution signs on doors that open onto one or more steps.
9. Protruding power and telephone outlets or radiator valves.
10. Ladders or stands not equipped with non-skid treads and feet.
11. Wax used on floors not non-skid.
12. Differences in floor elevation in aisles, corridors, etc., not marked.
13. Personnel carrying supplies or materials which obscure their view.
14. No storm mats at exterior door entrances during inclement weather.
15. Damaged floor coverings.

- Falling Objects

16. Weight not properly distributed in file cabinets to prevent their being top-heavy.

17. Shelving not secured to walls to prevent falling.

18. Material on top of lockers or filing cabinets.

19. Ceiling fixtures, fans, etc., not firmly secured.

20. Flower pots, boxes, vases, etc., on window sills or ledges.

- Collisions and Obstructions

21. Materials stored in aisles or corridors.

22. Desks and cabinets not positioned so opened drawers extend into aisles.

23. Dual doors not marked "IN" and "OUT" or "ENTRANCE" and "EXIT".

24. Transparent glass doors not marked.

- Equipment

25. Defective electric cords.

26. No guarding of moving parts on office machines.

27. No grounding of electric office machines.

28. Loose electric fan blades and defective guards.

29. Improper electrical connections.

30. Spike files in use.

31. Weak adjusting springs or loose casters on office chairs.

32. Glass desk tops cracked, chipped, etc.

33. Cracked porcelain handles on plumbing fixtures.

- Fires and Panic

34. Improper storage of flammable materials.

35. Oily rags not stored in proper containers.

36. Fireproof base not present under electric hot plates.

37. Suitable containers not available for cigar or cigarette butts and ashes.

38. Cigar or cigarette butts in waste paper baskets.

39. Location of fire extinguishers not marked.

40. Materials stored in front of extinguishers.

41. Proper type of fire extinguishers not provided.

42. Nitrate film not stored in proper vaults or cabinets.

43. Fire drills not held at regular intervals.

44. Routes to fire escapes and exits not open and not properly marked.

● Other

45. Inadequate provision for first-aid and medical service.

46. Improper ventilation and lighting.

47. Steam pipes not covered.

48. Improper handling and storage of sharp objects (knives, razor blades, scissors, etc.)

49. Protective creams and lotions not available for personnel using solvents.

50. Improper storage of poisonous substances.

51. Poor housekeeping.

52. Improper lifting and handling of heavy objects.

● ● ● ●

CODE OF THE ROAD

A COURTEOUS DRIVER . . . . .

Is a driver who adheres strictly to traffic laws and regulations. He respects the rights and feelings of other drivers, of pedestrians, and of his passengers. He is conscious of the value of good public relations, of salesmanship at the wheel, and knows that his actions as a driver reflect favorably upon his employer as well as himself.

ALSO . . . . .

HE

- Never loses his temper or fights traffic.
- Never insists on the right-of-way.
- Avoids double parking.
- Drives in the proper lane and stays there.
- Never stops so as to interfere with other traffic.
- Doesn't slow down in front of a vehicle he has just passed.
- Uses his horn to warn, not to reprimand other drivers and pedestrians.
- Uses the lower headlight beam when meeting or following other traffic at night.
- Doesn't start up until he gets the "GREEN" at a traffic light, or creep ahead while waiting for the green.
- Avoids sudden stops.
- Respects the rights of pedestrians.
- Acknowledges courteous acts of others.

Driver courtesy goes beyond good manners and that which is required by law. It is being helpful and cooperative in traffic.

DON'T CAUSE OR BECOME A STATISTIC!

Sharpe Army Depot
Flyer

WINTER DRIVING HAZARDS

The six basic hazards of winter driving that cause motorists the most trouble are the following:

a. Effect of Temperature. Always drive with the thermometer in mind. Braking distance about doubles as the temperature rises from 10° to 32°F.

b. Reduced Visibility. Road slush and grime, ice and snow, early hours of darkness -- all of these make it hard to see on winter roads.

c. Inadequate Traction To Go. Pulling away from a standstill, climbing hills, or going through deep snow can all cause trouble -- from aggravating delays to major tie-ups and accidents.

d. Reduced Ability to Stop and Steer. Poor traction on snow or ice stretches braking distances from three to twelve times the distance needed on dry pavement.

e. Unexpected Icy Conditions. A sudden snowstorm or freezing rain can catch you with your winter driving guard down. Equally important, and perhaps more dangerous, is the unexpected ice one meets in clear weather in shady and protected spots, and on bridges and overpasses.

f. Ice and Snow Polished by Traffic. The polishing action of tires sliding to a stop or spinning to get started on snow or ice greatly increases the slipperiness of already hazardous road surfaces. This occurs particularly at intersections, around curves and on hills.

- Safety Gram, U.S. Army Mobility Command

SPARK OF DISASTER

The individual who studies reports of explosions soon becomes familiar with one comment that often appears in them. It is likely to appear in the following words and sequence in the list of causes for this type of accident:

> "Investigation revealed the following possible cause of the explosion - static electricity."

Many AMC installations manufacture, handle, and store materials that a spark may cause to explode. If loss of life and property is to be avoided, adequate measures must be taken to prevent the static sparks that can cause disaster.

Whether we have few or many years of experience working with explosives, it is essential that we remain keenly aware of just what static is and what measures we must take to prevent it from causing an unwanted explosion.

Static electricity, as the name indicates, is the accumulated charge of electricity on the surface of a non-conductive material. This electrification is caused by migration of electrons across the interface between dissimilar materials that come into contact with each other. If one or both of the materials are non-conductors, the new distribution of electrons probably will persist when the materials are separated. The hazard of static electricity lies in the accumulation of charges and their eventual discharge in the form of a spark.

The three basic means of preventing the accumulation of static electricity are humidification, ionization, and bonding and grounding.

The bonding and grounding method is generally used by AMC installations. Methods and procedures for bonding and grounding of equipment are summarized in Section 7, AMCR 385-224.

If bonding and grounding are to be used successfully as a means of dissipation, it is necessary that certain facts be understood:

a. The mere physical connection to a ground is not necessarily sufficient to dissipate static charges. Connections must provide electrically continuous, low-resistance paths to ground.

b. Bonding and grounding conductors must be of sufficient size to provide required electrical conductivity and mechanical strength.

c. Connections to equipment and ground must be strong and insure good electrical contact.

d. The grounding (earthing) of two pieces of equipment in close proximity by means of separate ground conductors does not in all cases eliminate the static hazard. In such cases, a difference of electrical potential can exist and a static spark can occur. To eliminate this difference of potential, all bodies in close proximity must be electrically interconnected or "bonded."

Precautions that can be taken to prevent static caused explosions include the following:

a. Avoid the use of non-conductive material such as plastics, nylon, etc.

b. Bond and ground all static producing objects.

c. Make sure that grounds and bonds are both physically and electrically adequate.

d. Test all grounds and bonds upon installation and periodically thereafter.

e. Connect all machinery and equipment to a common ground to avoid differences of potential.

f. All pieces of piping such as exhaust systems and collection ducts must be bonded together. Physical connection of the pipes or ducts does not necessarily mean the system is bonded.

g. Assure that all grounds are adequate and meet the requirements of AMCR 385-224.

Control of explosions caused by static discharges can be accomplished by use of the measures herein and by using the techniques described in the National Fire Protection Association Pamphlet No. 77M, "Static Electricity," and other approved standards for bonding and grounding.

● HAZARD CLASSIFICATION TESTS OF AMMUNITION, BLANK, FOR 105MM HOWITZER

Recently, tests were conducted at Savanna Army Depot to determine the hazard classifications of Ammunition, Blank, for 105MM Howitzer. Based on the results of the tests, the following storage hazard classification, compatibility group, and ICC class and markings are assigned to blank ammunition for cannons:

a. Storage hazard class - 2

b. Compatibility group - B, E, N

c. ICC class B (no change)

d. ICC marking - ammunition for cannon without projectiles (no change)

Given below are tests performed and results obtained:

Test A - Propagations within a single box. One round was primed by removing the closing cup, inserting an electric blasting cap in contact with the black powder charge and replacing the closing cup. The cup was resealed with Pettman cement to conform with specifications and drawings for the item. The primed round was placed near the center of a box of nine unmodified rounds and the box rebanded. Sandfilled boxes were placed on top and adjacent to both sides and ends of the ammunition box to provide confinement (see Photo 1) and the blasting cap was initiated. There was no propagation of explosions within a single box during five trials. The following results were noted for the five trials (see Photo 2 for example of results):

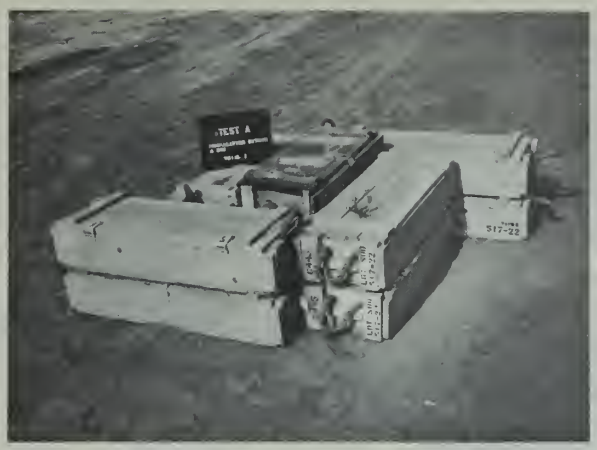
	TRIAL NUMBER				
	1	2	3	4	5
Number of rounds which exploded simultaneously	0	0	0	0	0
Number of rounds which exploded subsequent to initial explosion	0	0	0	0	0
Radius of debris pattern	13'	15'	0	5'	0

There was no damage to any cartridge cases involved in above test. On rounds utilized in Trial #1, it was observed that the closing cup on one round was broken loose from the cartridge case for approximately 270° of its circumference. On rounds used in Trial #2, four rounds had cups broken loose for approximately 180° of the circumference of the cartridge case. Cartridge cases were not deformed.

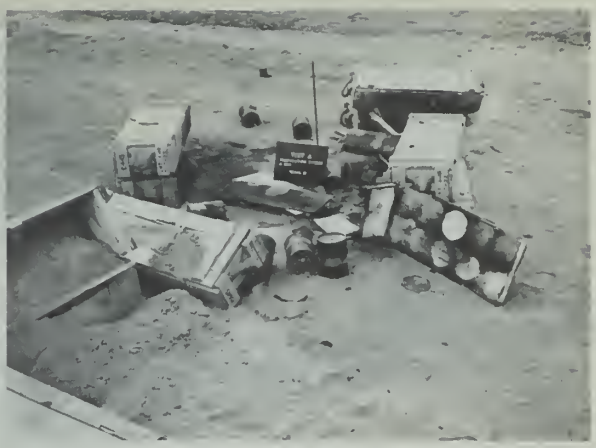
Test B - Propagation from one box to another. As no propagations occurred in Test A, this test was not required but was performed for information purposes only. Rounds utilized in this test were undamaged rounds recovered from Test A. A primed round was prepared and placed in a box of ammunition as in Test A. This box was placed on top of a full ten-round box of blank ammunition (with no primed round), confined with sandfilled boxes as in Test A, and the blasting cap initiated. No propagation occurred and no damage to cartridge cases was noted (see Photo 3). A second trial was conducted by placing the box with a primed round on the ground, a full box (with no primed round) an top and confining these with sandfilled boxes. The top box of ammunition was inverted so that the rounds were in a position of mouth to mouth. No propagations occurred and no damage to cartridge cases was observed (see Photo 4). The second box of ammunition suffered only minor box damage.

During Tests A and B, the metal ends on the tops of fiber containers, for blank rounds in the box with the primed round, were forced inward (concave) from 3/8" to 5/8" by the force of the explosion of the primed round.

Test C - Fire Test - Open Fire. Six boxes of ammunition (60 rounds), banded together as a single unit, were placed on a crib and covered with scrap lumber (see Photo 5). The pile was saturated with diesel fuel and ignited. Approximately 17 minutes after ignition of the pile, the black powder charge in one round ignited and burned. Progressively, at intervals of 15-45 seconds from initiation of the first round, single rounds or groups of two to five rounds burned with a bright flash and puff of smoke, followed by the sound of the primers exploding. Only three rounds exploded during this test and these were single explosions. Approximately fifty minutes after ignition of the pile, all sixty rounds had either burned or exploded. There was no scattering of cartridge cases and no damage to cases other than fire damage (see Photo 6).



Test A - Confinement of Ammo box using sandfilled boxes. Photo 1



Test A - Trial #4 - View showing dispersion of ammo and damage to boxes. Photo 2

Test B - 1st Trial - View showing dispersion of rounds and boxes. Photo 4

Test B - 2nd Trial - View showing effects. Photo 3

Test C - Fire Test - View of boxes banded together as unit, partially surrounded w/scrap lumber. Photo 5

Test C - View of cartridge cases after completion of burn. Photo 6

DO YOU KNOW?

Here are ten questions that will test your knowledge of safety requirements that you will need under different circumstances. The answers to all of them may be found in AMCR 385-224. How many can you answer without referring to the regulation? The correct answers and references appear on pages 39 and 40.

1. In a cutting or welding operation, what is the most difficult hazard to control?

   Answer and Reference:

2. In an extra hazardous operation involving destruction of explosives and ammunition, what is the minimum number of workers allowed to take part?

   Answer and Reference:

3. What is the maximum allowable clearance between a work rest and the surface of the grinding wheel?

   Answer and Reference:

4. Does the Manual specify square, circular, or rectangular sieve or screen openings for the screening of bulk explosives?

   Answer and Reference:

5. Does a stairway five risers high without a handrail conform to the requirements of the Manual?

   Answer and Reference:

6. When is it permissible to destroy ammunition or explosives by dumping at sea?

   Answer and Reference:

7. Openings in fire walls shall be protected in accordance with the requirements of what pamphlet?

   Answer and Reference:

8. What cleansing agent may be used to clean a pelleting machine in which tetryl has been processed?

   Answer and Reference:

9. Is it ever permissible for electricians to work on a live or "hot" electrical circuit?

   Answer and Reference:

10. If it is discovered that minor repairs are necessary on an airplane that has been loaded with explosives, should these be unloaded before the repairs are started?

    Answer and Reference:

* * *

TABLE TENNIS HAS A HAZARD

Duane Maule, Rock Island Arsenal table tennis champion for 1964-65, was having a practice session with his wife. Suddenly she hit a hard smash, and he failed to stop the ball as it came straight at his right eye. The ball bounced off without harm to Maule, for he had taken the sensible precaution of wearing his safety glasses.

A soldier at another AMC installation was not as safety minded as the Rock Island Arsenal champion. This enlisted man was struck in the left eye by a ping-pong ball. He complained of blurring of vision and was hospitalized for five days for an internal bleeding of the iris.

CURTAIN MAKES INCINERATOR SAFER

N. J. Dault, Safety Officer
Watervliet Arsenal

A destruction officer for classified material received for destruction a roll of exposed dry photo paper for a Three-M photo copier. Arriving at the incinerator, the employee thought the fire was insufficient to destroy the roll. To assure complete destruction, in accordance with the security requirements, he unrolled the roll completely and began to feed the paper through the raised incinerator door, rather than throwing the intact roll through a hinged door at the back of the incinerator as was customary. Suddenly the paper flash-fired. Luckily the employee suffered only singed hair and eyebrows.

To prevent a recurrence of this incident, a new procedure was written for the destruction of rolls of paper and similar items. It included the following provisions:

a. Destruction officers will not attempt to destroy this type of waste except when a hot fire exists in the incinerator.

b. The paper will not be unrolled from the cylinder for burning.

In addition, the Safety Office and Facilities Branch designed a flexible metallic curtain to cover the entire opening of the incinerator, even when the door is raised to its highest point. The curtain is made of sash chain with a one-fourth-inch rod threaded through the top link of each length of chain. The rod is threaded at each end and anchored through a plate on each side of the curtain. After installation, it was found that for practical purposes the curtain works best when it reaches down to about six inches from the floor, rather than full length.

The incident involving the security officer resulted in added protection for the full-time workman at the incinerator.

Photo 1 - A workman pushes trash through the sash curtain over incinerator door. He wears safety shoes, gloves, face shield (wire mesh), and safety glasses.

Photo 2 - Close-up of chain link about to be slipped onto one-fourth-inch rod supporting curtain. When curtain is complete, rod goes through a hole in side plate and is secured with nuts on each end of the rod.

• REFERENCE PUBLICATIONS

AR 345-20, 22 June 1965
Records, Release of Information and Records from Army Files

AR 350-15, 12 July 1965
Education and Training, Military Training Aids

AR 385-10, 13 July 1965, Change 2
Safety, Army Safety Program

AR 385-30, 16 August 1965
Safety, Safety Color Code Markings and Signs

AR 385-32, 27 August 1965
Safety, Protective Clothing and Equipment
(Note: Instruction for record of issue is amplified in paragraph 7c.)

AR 420-43, 19 August 1965
Repairs and Utilities, Electric Services

AMCR 11-26, June 1965
Army Programs, Configuration Management

AMCR 190-3, Change 2, 23 July 1965
Military Police, Preservation of Order Activities

AMCR 385-6, 12 August 1965
Safety, Motor Vehicle Seat Belts

AMCR 385-17, 29 September 1965
Safety, Hazardous Items Contracts

AMCR 700-38, 14 July 1965
Logistics, Test and Evaluation of Materiel - Correction of Defects Found During Materiel Life Cycle Testing

AMCR 702-1, 29 July 1965
Quality Assurance, Independent Product Assessment

DA Cir 420-13, 18 August 1965
Repairs and Utilities, Fire Prevention Week

"WELL... DID YOU KNOW?

Here are the answers to the questions on pages 34 and 35. All questions were based on information contained in AMCR 385-224. A reference to the pertinent paragraph follows each answer.

1. In a cutting and welding operation probably the most difficult hazard to control is that of sparks setting fire to combustible materials located near by. Reference: Paragraph 927.

2. The number of persons engaged in disposal and destruction operations shall be no fewer than two. Reference: Paragraph 2711b.

3. One-eighth of an inch. Reference: Paragraph 920b.

4. No. The screen openings may be circular, square, or rectangular. Reference: Paragraph 2602a.

5. No. Stairways that are four or more risers in height must be provided with handrails. Reference: Paragraph 511.

6. Ammunition or explosives may be dumped at sea when disposal or destruction by other means is impracticable. Reference: Paragraph 2729.

7. Openings in fire walls shall be protected in accordance with the requirements of National Board of Fire Underwriters' Pamphlet No. 80, "Protection of Openings in Walls and Partitions Against Fire." Reference: Paragraph 505.

8. A tetryl pelleting press should be cleaned with acetone or acetone dampened rags. Reference: Paragraph 2617e.

9. In cases of critical processes and operations where alternate power sources are not available, it may become necessary to perform emergency work on energized circuits. Such work is authorized. Reference: Paragraph 607a.

10. For minor repairs on the airplane it would not be necessary to unload the cargo of explosives. The repairs should be accomplished at a location separated from dissimilar exposures and other aircraft by the appropriate inhabited building distance for the cargo on board. Reference: Paragraph 2304a.

AN OPEN LETTER

To a Reckless Driver:

Perhaps you were in a hurry to get home a few nights ago...what with its raining so hard, perhaps your thoughts were of a kitchen window left open...perhaps there were thoughts of groceries to buy for the family...or a newspaper for the"ole man"...

I don't know what it was...but your failure to stop at that stop sign on the road leading into Oceanport Avenue almost resulted in a collision which I'm sure would have been most serious, if not fatal. I can still see the frantic, almost hopeless, look in your eyes as my car swerved closer to yours, only to miss you by the smallest of margins.

We can thank God that we are alive today...to work, to play, to enjoy our families. It could have been much different! I'm sure you'll agree.

So please remember this. When you get behind the wheel of your car dismiss all other thoughts but the control of your vehicle. Obey all traffic signs implicitly which were installed for your safety...AND MINE.

A Fellow Driver

Submitted by: Electronics Command, Safety Division.

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UNIVERSITY OF FLORIDA
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FLARE